





DIGITALIZATION, INNOVATION AND SUSTAINABLE DEVELOPMENT: AN EVIDENCE OF ISLAMIC FINANCE PERSPECTIVE




 **Mohammad Sahabuddin¹⁺**

 **Junaina**

Muhammad²

Mohamed Hisham

Yahya³

 **Sabarina**

Mohammed

Shah⁴

 **Md. Kausar Alam⁵**

^{1,2,3,4,5} Faculty of Economics and Management, Universiti Putra Malaysia (UPM), Malaysia.

¹Email: sahabuddingme@gmail.com Tel: +601123779088

²Email: junaina@upm.edu.my

³Email: mohdhisam@upm.edu.my

⁴Email: sabarina@upm.edu.my Tel: +60196230788

⁵Email: kausarflorence@gmail.com Tel: +60142330591



(+ Corresponding author)

ABSTRACT

Article History

Received: 2 September 2019

Revised: 4 October 2019

Accepted: 6 November 2019

Published: 17 December 2019

Keywords

Islamic finance

Digitalization

Innovation and sustainable development.

Islamic finance has developed a unique and balance system that complies with the principles of Shariah. Shariah encompasses all aspect of human life that aims to provide a fair, equitable distribution of wealth, alleviate all form of poverty and promote sustainable development. This study focuses on discussing the current issue of digitalization, innovation and sustainable development based on the evidence of Islamic finance. The objectives of this study are to generate the discussion, how digitalization and innovation play their role to sustain development in Islamic finance perspectives. Moreover, the study also sheds light on the challenges faced by Islamic finance on applying this digitalization and innovation viewpoints. The evidence suggests that due to the rapid economic growth, digitalization and innovation are the catalysts to sustain the development. In Islamic finance perspectives, digitalization and innovation (Fintech- blockchain and bitcoin) are still in their infancy stage. The researchers agreed that FinTech is a Maslahah (interest) to broaden the area of sustainable development such as zero poverty, no hunger and the social well-being of the community.

Contribution/ Originality: This study contributes to the existing literature by discussing the current issue of digitalization, innovation and sustainable development based on the evidence of Islamic finance.

1. INTRODUCTION

Globalization is the process of changing and moving financial markets all over the world. In financial globalization perspectives, the capital market has become more interconnected with others. The trend to the capital market is difficult to predict due to its complex inter-relationship (Celik and Baydan, 2015; Saiti *et al.*, 2016). Thus, the interest of recent research has shifted from traditional perspectives to Islamic finance perspectives and this trend has been tracked by the advancement of information technology such as digitalization, innovation and sustainable development (Balli *et al.*, 2015). Furthermore, the recent global financial crisis (2007-2008) has stressed the importance to rely on long-term sources of economic growth and caused a severe effect on different financial markets. During this crisis, shocks are sparked from the originated country of the United States and gradually have

spread out all over the world. Consequently, market participants rushed into buying safe-haven assets due to the malformed global markets and the Islamic financial market has shown its capability to overcome the challenge (Saâdaoui *et al.*, 2017).

Islamic finance has come from the root of the Islamic economy, which differs from other economics systems. It has own unique and balance system that fulfills the desire of Maqasid-Al-Shariah (Elasrag, 2019). The objectives of Shariah are to govern all aspects of Muslim life and maintain social welfare, justice, and financial stability. Furthermore, this system always tries to sustain its economics, social and Shariah obligations which are not only close to the aims of profit maximization but also make a balance of life 'here and hereafter' (Chapra, 2000; Dusuki, 2008). The growth of Islamic finance is very impressive. For the last ten years, the average growth rate of Islamic finance has been maintained at 15%-20%. According to GIFR (2017) the size of global Islamic financial assets has grown from USD 639 Billion to USD 2293 billion from 2007 until 2016.

2. DIGITALIZATION AND INNOVATION

In the era of digitalization, financial innovation is the key concept of changing, moving, developing and transforming the ideas and system with the new wave of technology, which is popularly known as FinTech. The term FinTech is usually used to define innovation in the area of financial services. The word FinTech itself comes from the field of finance and technology that refers to the magnitude of innovation with the touch of modern technology (Gomber *et al.*, 2017). Therefore, as an engine-driven force, it leads to links with other financial instruments, increases the growth of the real economy and ensures sustainable development. Furthermore, digitalization and innovation are reshaping the proposition values of the existing financial product and services (Mohamed and Ali, 2018). In addition, innovation is a powerful and continuous effort that transforms something into a new form to be sustained. This is the core objective of a firm, organizations or system. For example, Islamic finance itself is relatively an innovation in the global financial system, which has grown into a positive momentum and drawn an extra attention not only among the Muslim but also the non-Muslim investors as a viable alternative and stable growth rate (Rizvi and Arshad, 2017; Sahabuddin *et al.*, 2018). The aim of this study is to generate the discussion, on how digitalization and innovation (FinTech) play a role in sustainable development in Islamic finance perspectives. Moreover, the study also sheds light on the challenges faced by Islamic finance is spreading on this innovation in Islamic finance viewpoints.

2.1. Relationship between Digitalization, Innovation and Sustainable Development

Since Fintech plays a vital role in improving financial inclusion as well as fostering economic growth and sustainable development by its innovative characteristics, Islamic finance should remove this innovative trap and adopt a new web under its framework. The innovations are driven by start-ups in financial products and services, which provide better experience and efficiency through technology, the internet, and smartphone (Leong *et al.*, 2017). Furthermore, Fintech not only possesses start-ups potentiality to reshape the financial industry but also changes the mode and technique for paying and sending money, lending and investing as a whole. FinTech start-ups have the potentials to remodel the financial industry (Fan, 2018) and they may change the way how payment is made, as well as sending, lending and investing money (Amalia, 2016). There are several studies that determine the lender profile based on their social media data that have been conducted before. Masyutin (2015) has shown in his research, the possibility to use social media data in determining credit scoring. Collecting information from a consumer's network can also help the lender to get true creditworthiness (Wei *et al.*, 2015). The social media information potentially helps to reduce asymmetrical information between lenders and borrowers. Practically, by integrating social media data, we can increase payment prediction by 18 % (Tan and Phan, 2016).

As an example, the results of a case study that investigate the possibility of an Islamic FinTech start-up called Angsur in fostering financial inclusion in Indonesia can be examined. Angsur is an Islamic financial technology

start-up that offers the experience to “buy the product now, and pay later” by introducing to the consumer the micro-lending principle. The ideas have experimented with undergraduate students who are digitally active users. The students produce a huge amount of digital traces on the internet such as social media. The data is used to analyze the lender profile instead of their credit history. Since students are categorized as underbanked who lack a credit history, the traditional banks cannot provide such a service for students. Angsur does not use interest terms but adopting murabahah principal by taking profit margin and gives a chance to customers to pay by installments from 1 until 12 months. Angsur takes 2.5 % from the product margin for sadaqah, which will be distributed to the orphanage and the underprivileged people who live in the slum area. Sadaqah is a voluntary charity by giving some money to poor people. The concept of sadaqah is encouraged according to Islamic principles that encourage Islamic financial service providers to consider two parallel orientations in both business and social responsibility (Firmansyah and Ramdani, 2018; Firmansyah and Anwar, 2019).

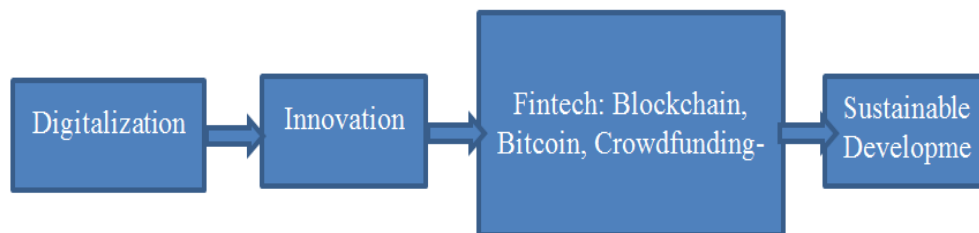


Figure-1. Relationship between digitalization, innovation and sustainable development.

In this regard, Islamic finance and its digitalization process create an opportunity to rebuild trust and confidence in the financial system that had to promote economic growth and sustainable development. That means the relating innovating role and creative use of digital technology are a powerful vision of the Sustainable Development Agenda in 2030. The relationships of the variables are indicated in Figure 1.

However, Digitalization is the process of (digitization) of considering how best to apply digitalized information to simplify specified operations. On the other hand, innovation is the thinking outside the box process which is not only dealing in introducing or implementing new ideas or methods. The word innovation can be defined as a process that involves multiple activities to uncover new ways to do things.

3. LITERATURE REVIEW

As Fintech is relatively at its infancy stage, limited studies have been conducted on Islamic Fintech. For instance, Alaabed and Mirakhor (2017); Firmansyah and Ramdani (2018); Ulya (2018) are very recent empirical studies and in these studies, researchers have been focusing on the impact of Fintech to undertake the application of risk-sharing Islamic finance perspectives.

Alaabed and Mirakhor (2017) study the role of Fintech in accelerating the implementation of risk-sharing Islamic finance. They argue that financial technology is closer to the spirit of shariah as it removes two major risks in a specific industry such as banking, namely uneven maturity and leverage.

Firmansyah and Anwar (2019) survey on six Shariah-based firms through online questionnaires. These firms are located in Singapore and Indonesia. The results show that all the participating firms strongly agree upon the idea that Islamic Fintech has a bright and promising future in their country and the world. They also stated that the number of customers has been increasing. The result of this study also shows that there is an indication that Islamic Fintech is flourishing, which is indicated by the growing revenue of most of the participating firms. By looking at the growing number of customers and revenues of Islamic Fintech firms, the prospect of Islamic financial technology is bright, especially in Muslim countries. This idea is in line with Wintermeyer and Basit (2017). The new growing trend in Islamic finance requires the support of all the stakeholders in order to flourish the Islamic Fintech. Malaysia is leading this sector and has the most Islamic Fintech firms, followed by London and Indonesia.

Firmansyah and Ramdani (2018) study one of the Islamic Fintech firms in Indonesia, i.e., Angsur. They assert that Islamic Fintech such as Angsur innovatively provides a solution to encourage financial inclusion as well as solving a specific social problem.

Meanwhile, according to the study of Ulya (2018) the rule of Shariah has maintained the regulation of the Islamic Fintech, specifically, peer-to-peer lending. This is not sufficient yet. Thus, there is a need for future improvement in the regulations which benefit the involved parties. This paper aims to study the profile, prospect, and challenges of the financial technology firms which are categorized as shariah-compliant. This paper adds to the scant literature of Islamic finance, especially the Islamic financial technology, which is currently uprising, reducing the gap between the theory and practice perspective.

Furthermore, in Islamic finance perspectives, banking, capital market, zakat waqf, and takaful sectors have shown aggressive innovation in their own industry particularly in the FinTech system. FinTech is not only an innovation in promoting a traditional financial product but also peer to peer beholding in Islamic financial products and services. Thus, FinTech becomes a key innovation for expanding and sustaining in future business and Islamic Financial Technology (i-FinTech) which has been shedding light to introduce and expand technological innovation in Islamic financial sectors.

In the global financial world as an emerging issue, 'i-FinTech' has become more popular day by day. The global Islamic finance industry is capable to outstrip its opponents and can continuously produce competitive benefits to their contestants by involving with the higher technological system. The practical Muslims are more interested to emphasize the development of Islamic banking products and services. Islamic finance industries can easily draw global attention by using the term i-FinTech system in their functions and services (Bakar and Rosbi, 2018).

Besides, this system can easily draw the intention of the customers to participate in the products and services drive. The development of FinTech has expanded into the persistent of cryptocurrency or digital currency, for example, the Bitcoin which is the most well-known concept. In the cryptocurrency, encryption methods are applied to monitor the generation of units of currency and validate the transfer of funds, and independent operation of the central bank (Nakamoto, 2017). The applied tactic in cryptocurrency is known as the blockchain. A blockchain is an open, circulated ledger that can record transactions between the parties proficiently in a verifiable and perpetual way (Reid and Harrigan, 2013; Bakar *et al.*, 2017).

4. FINDINGS, LIMITATIONS, RECOMMENDATION AND CONCLUSION

Technology has the potential to contribute effectively, particularly in the area of financial inclusion and sustainable development, offering new ways for integration to those who are excluded from the financial services industry and have a superior financial and social status, while ensuring that they have access to a wide range of financial products in line with their values. Rather than looking at the fin-tech revolution as unwelcoming, the leverage on it is to advance economic and social goals in embracing it as an opportunity, because it's potential for social impact is enormous (Mohamed and Ali, 2018).

Based on the literature, it has shown that Muslims scholars are studying the issue of Islamic finance extensively in recent years. Most of the researchers have discussed the issue of digitalization, innovation and sustainable development in conventional finance perspectives. Some of the researchers have pointed out the conceptualize issue of Fintech, cryptocurrency, and blockchain. Interestingly, most of the researchers ignore the broader area of sustainable development. There are a few studies that focus on the current research area of digitalization, innovation and sustainable development in Islamic perspectives. As a comprehensive financial system, Islamic finance has an ability to attain numerous objects; spiritual purposes, social aims and economic goals (Ahmed *et al.*, 2016; Ismail, 2017). Therefore, Islamic finance has experienced and verified divine instruments for evacuating poverty from society and sustain the development, particularly among Muslims.

In the last couple of years complete participation has been noticed in the recent development of technology which has enhanced the viewpoint on how the economy and the world is perceived. Prior research has focused on the potential of invention and digitalization (FinTech) in altering the economy particularly the banking and financial sectors. FinTech illustrates numerous characteristics counting an apparent, trustless, and effective environment for all kinds of financial and economic functions. This study emphasizes the viewpoint of FinTech in the improvement of the monetary structure especially currencies from Islamic standpoints. This review examines the growth and potential of digital currencies (FinTech) supported by blockchain are transforming how currencies are perceived. Particularly, the research aims to explore the compatibility of emerging digital currency (FinTech) that is well-suited with the Shariah principles on currencies (Alzubaidi and Abdullah, 2017). To broaden the understanding of the requisite activities in the currency to be compatible from an Islamic viewpoint. In conclusion, developing Shariah-compliant digital currency (FinTech) can be feasible soon since the presented cases in the research might be able to deliver adequate resolutions to overcome the existing limitations of digital currencies concerning its practicality and compliance with Islamic functions of money and social objects.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no competing interests.

Acknowledgement: All authors contributed equally to the conception and design of the study.

REFERENCES

- Ahmed, H.I., S. Akbar and K. Barikzai, 2016. Objectives of islamic finance achieved by islamic banks. *Al-Adwa*, 45(31): 45-65.
- Alaabed, F.A. and A. Mirakhor, 2017. Accelerating risk sharing finance via FinTech: NextGen Islamic Finance. In *The 1st International Colloquium on Islamic banking and Finance*. pp: 1-10.
- Alzubaidi, I.B. and A. Abdullah, 2017. Developing a digital currency from an Islamic Perspective: Case of Blockchain Technology. *International Business Research*, 10(11): 79-87.
- Amalia, F., 2016. The fintech book: The financial technology handbook for investors, entrepreneurs and visionaries. *Journal of Indonesian Economy and Business*, 31(3): 345-348.
- Bakar, N.A. and S. Rosbi, 2018. Robust framework diagnostics of Blockchain for bitcoin transaction system: A technical analysis from Islamic Financial Technology (i-FinTech) perspective. *International Journal of Business and Management*, 2(3): 22-29.
- Bakar, N.A., S. Rosbi and K. Uzaki, 2017. Cryptocurrency framework diagnostics from islamic finance perspective: A new insight of bitcoin system transaction. *International Journal of Management Science and Business Administration*, 4(1): 19-28.
- Balli, F., H.O. Balli, R.J. Louis and T.K. Vo, 2015. The transmission of market shocks and bilateral linkages: Evidence from emerging economies. *International Review of Financial Analysis*, 42(1): 349-357. DOI <https://doi.org/10.1016/j.irfa.2015.08.010>.
- Celik, S. and E. Baydan, 2015. Bringing a new perspective on co-movements of stock markets in emerging economies through causality and wavelet analysis. *Topics in Middle Eastern and North African Economies*, 17(1): 26-51.
- Chapra, M.U., 2000. *The future of economics: An islamic perspective*. UK: Islamic Foundation.
- Dusuki, A.W., 2008. Understanding the objectives of islamic banking: A survey of stakeholders' perspectives. *International Journal of Islamic and Middle Eastern Finance and Management*, 1(2): 132-148. DOI <https://doi.org/10.1108/17538390810880982>.
- Elasrag, H., 2019. Blockchains for islamic finance: Obstacles & challenges. Available from <https://mpr.aub.uni-muenchen.de/92676/>.
- Fan, P.S., 2018. Singapore approach to develop and regulate FinTech. In *Handbook of Blockchain, Digital Finance, and Inclusion*. Academic Press, 1: 347-357.

- Firmansyah, E.A. and M. Anwar, 2019. Islamic financial technology (fintech): Its challenges and prospect. In Achieving and Sustaining SDGs 2018 Conference: Harnessing the Power of Frontier Technology to Achieve the Sustainable Development Goals (ASSDG 2018). Atlantis Press.
- Firmansyah, H.B. and A.L. Ramdani, 2018. The role of Islamic financial technology (FinTech) start-up in improving financial inclusion in Indonesia case: Angsur. Available from <http://dx.doi.org/10.2139/ssrn.3194546>.
- GIFR, 2017. Global Islamic Finance Report 2017. Available from http://www.gifr.net/gifr_2017.htm.
- Gomber, P., J.-A. Koch and M. Siering, 2017. Digital finance and fintech: Current research and future research directions. *Journal of Business Economics*, 87(5): 537-580. DOI <https://doi.org/10.1007/s11573-017-0852-x>.
- Ismail, A.G., 2017. Sustainable development goals and the role of Islamic Finance. 2016 Quarterly Islamic Finance Public Lecture INCIEF-IRTI. Bangi, Malaysia: IRTI.
- Leong, C., B. Tan, X. Xiao, F.T.C. Tan and Y. Sun, 2017. Nurturing a FinTech ecosystem: The case of a youth microloan startup in China. *International Journal of Information Management*, 37(2): 92-97. DOI <https://doi.org/10.1016/j.ijinfomgt.2016.11.006>.
- Masyutin, A., 2015. Credit scoring based on social network data. *Business Informatics*, 3(33): 15-23.
- Mohamed, H. and H. Ali, 2018. Blockchain, Fintech, and Islamic finance: Building the future in the new Islamic digital economy. Walter de Gruyter Gmb H & Co KG.
- Nakamoto, S., 2017. Bitcoin: A peer-to-peer electronic cash system. Available from <http://www.bitcoin.org/bitcoin>.
- Reid, F. and M. Harrigan, 2013. An analysis of anonymity in the bitcoin system. In *Security and privacy in social networks*. New York: Springer. pp: 197-223.
- Rizvi, S.A.R. and S. Arshad, 2017. Analysis of the efficiency-integration nexus of Japanese stock market. *Physica A: Statistical Mechanics and its Applications*, 470(1): 296-308. DOI <https://doi.org/10.1016/j.physa.2016.11.142>.
- Saâdaoui, F., N. Naifar and M.S. Aldohaiman, 2017. Predictability and co-movement relationships between conventional and islamic stock market indexes: A multiscale exploration using wavelets. *Physica A: Statistical Mechanics and its Applications*, 482(1): 552-568. DOI <https://doi.org/10.1016/j.physa.2017.04.074>.
- Sahabuddin, M., J. Muhammad, M.H.D. HjYahya, S.M. Shah and M.M. Rahman, 2018. The co-movement between Shariah compliant and sectorial stock indexes performance in Bursa Malaysia. *Asian Economic and Financial Review*, 8(4): 515-524.
- Saiti, B., O.I. Bacha and M. Masih, 2016. Testing the conventional and islamic financial market contagion: Evidence from wavelet analysis. *Emerging Markets Finance and Trade*, 52(8): 1832-1849. DOI <https://doi.org/10.1080/1540496x.2015.1087784>.
- Tan, T. and T. Phan, 2016. Social media-driven credit scoring the predictive value of social structures. Thirty Seventh International Conference on Information Systems, Dublin.
- Ulya, N.U., 2018. Legal protection of donation-based crowdfunding Zakat on financial technology: Digitalization of Zakat under Perspective of Positive Law and Islamic Law. In *International Conference of Zakat*.
- Wei, Y., P. Yildirim, C. Van den Bulte and C. Dellarocas, 2015. Credit scoring with social network data. *Marketing Science*, 35(2): 234-258. DOI <https://doi.org/10.1287/mksc.2015.0949>.
- Wintermeyer, L. and A.H. Basit, 2017. The future of Islamic FinTech is bright. *Forbes*. Available from <https://www.forbes.com/sites/lawrencewintermeyer/2017/12/08/the-future-of-islamicfintech-isbright/#47e1b19a65fa>.

Views and opinions expressed in this article are the views and opinions of the author(s), International Journal of Asian Social Science shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.